U.S. Department of the Interior NATIONAL PARK SERVICE

GENERAL PLAN OF ADMINISTRATION FOR THE EDUCATIONAL DIVISION

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Approved June 4, 1929

Horace M. Albright Director

Prepared by Educational Headquarters National Park Service

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The purpose of this General Plan of Administration for the Educational Division of the National Park Service is to codify principles of organization and operation and to state, as briefly as possible, the administrative plan to be followed in the operation of the various units of the Educational Division.

The plan is based upon actual organization and operation in the field, as exemplified by the most thoroughly developed park units, and has been recorded in order to form a basis for continuance of administration of these units and for the efficient organization and operation of new units. Having been thoroughly studied and approved by the Director, the procedure as outlined will hereafter be followed in the field; any necessary changes will be submitted to the Director for approval, through the Headquarters of the Educational Division. Sufficient latitude has been allowed for individual park educational officers to exercise their own personal initiative in carrying out individual park programs.

The present general plan is supplemented by an individual "Plan of Administration of the Educational Activities" for each park. The latter plans are prepared by the Park Naturalist and Chief Naturalist working in cooperation. After being concurred by the Superintendent, they are submitted by the Chief Naturalist to the Director for approval, after which they will be carried out in the field as are the technical plans of other Park Service divisions.

Horace M. Albright Director, National Park Service

II - SCIENTIFIC STANDARDS OF PARK EDUCATIONAL ACTIVITIES

In order that the work of the Educational Division be conducted according to the highest scientific standards, both in subject matter and in method, an Educational Advisory Board consisting of seven members has been appointed by the Secretary of the Interior. This board will advise with the Secretary on important matters of general policy having to do with the protection of natural resources and with the organization, development and current operation of educational activities in the national parks.

Important matters of general policy in the above fields originating from within the parks will therefore be referred to this board through the Director.

III - THE RELATION OF THE EDUCATIONAL DIVISION TO GENERAL PARK ADMINISTRATION

A - Protecting and Developing the Natural Features.

The Educational Division acts in a consulting capacity in the planning of any permanent improvements affecting the fauna and flora of other educational features. Roads, trails and buildings will be located so as to ensure not only optimum engineering standards and landscapes values but also so as to protect and make available the interesting scientific, scenic and historical features.

Park Naturalists will act as consultants, cooperating with the Superintendent and with representatives of other divisions. Special services of scientific experts will be available in the branches of science particularly important in that park under consideration.

Park Naturalists will be consulted in all questions pertaining to any steps taken to change floral or faunal relations in their particular park, including:

- 1. Maintenance of "natural" conditions.
- 2. Setting aside of "wilderness reserves" or other study areas.
- 3. Predatory animal control.
- 4. Insect control (in cooperation with Park Forester or other park officers).
- 5. Tree disease control.
- 6. Clean-up of forest area (as it affects fauna and flora).
- 7. Propagation and planting of fish.

B - Interpreting Natural Features

The parks were set aside to preserve outstanding examples of greatest scientific, scenic, archeological and historical interest. Educational services to the public in the national parks is based primarily upon this major objective. The primary function of the Educational Division, besides the part which it plays in the protection and development of natural phenomenon, is the interpretation of the distinctive features "for the benefit and enjoyment of the people."

This means that we are engaged in a specialized field of education in which our main objective is not primarily to raise the intellectual standard of our visitors in the academic sense. The number of facts which we deliver, compared with the number of which each person has obtained from his schooling, is infinitesimal. Our function lies rather in the inspirational enthusiasm which we can develop among our visitors - an enthusiasm based upon a sympathetic interpretation of the main things that the parks represent, whether these be the wonder of animate things living in natural communities, or the story of creation as written in the rocks, or the history of forgotten races as recorded by their picturesque dwellings.

Always, therefore, it should be borne in mind that the major objectives of our current educational program are working toward the following aims:

- 1. The interpretation of the natural features of our parks will be offered in a manner carefully planned to render the greatest enjoyment and lasting benefit to our visitors.
- 2. The presentation must impart to park visitors a feeling of fellowship with the outdoors, based upon <u>understanding</u> which will make each an enthusiastic protector of natural things and of things worth while in life.
- 3. Simplicity is the magnate of park educational work -- first, simplicity of subject matter, the limiting of the material offered is that having a bearing chiefly on the most important features of the park -- and second, simplicity in the method of presentation that will make even the most complicated natural phenomenon understandable to visitors from all walks of life.

4. * "Educational work should be reduced to the lowest limit which will give the visitor opportunity to discover the things of major interest, and to inform himself fully concerning them if he so desires."

Individual park plans of Administration are drafted and administered with these major objectives in mind.

*Note: This paragraph is from "A Report with Recommendations from the Committee on Study of Educational Problems in the National Parks." - January 9, 1929

IV - ADMINISTRATIVE PLANS OF THE EDUCATIONAL DIVISION

The importance of written administrative plans, particularly for the educational activities in the parks, cannot be overemphasized. Owing to the constantly changing personnel of the Educational Division, especially during the suddenly expanded activities of the three or four months of the summer season, concise and carefully planned records of procedure are absolutely necessary for the efficient functioning of each educational unit. The following plans form the basis for the current administration of all activities of the Educational Division:

A - General Plan of Administration of the Educational Division.

A general plan stating the principles of organization and operation of the Educational Division (this document).

B - Plan of Administration for Educational Headquarters.

A detailed plan of operation for all activities carried on from the Headquarters of the Educational Division, including the field work of Headquarters staff members. Submitted by the Chief Naturalist to Director for approval; no changed without similar approval.

C - Plan of Administration of Educational Activities for Each Individual National Park.

This is a detailed plan covering the organization and operation of all current educational activities carried on under Government supervision in each particular park. This plan is prepared by the Park Naturalist in collaboration with the [Chief Naturalist Park Service], following the same procedures as in the plans of other divisions of the Service. It is then submitted through the head of the Educational [Division Branch] to the Director for approval, and when approved is administered by the local park organization. Any necessary changes are to be authorized in the same manner.

Where no Park Naturalist has yet been authorized, the individual park "Plan of Administration" will be prepared by the [Chief Naturalist Asst. Director in charge of Br. of Ed.] and will be submitted for approval as outlined above.

V - PERSONNEL OF THE EDUCATIONAL DIVISION

A. Standards of Educational Division Personnel.

Each member of the personnel that initiates and carries out the park educational program must be preeminently fitted by personal qualifications, training and experience to direct or take a specialized part in the carrying out of such a program. So important are these qualifications that they are briefly listed herewith:

1. Scientific Training and Experience.

A thorough fundamental scientific background is necessary for each staff member whether he be engaged in research in specialized fields or in the interpretation of scientific facts in popular and non-technical language. Inasmuch as the work of the Educational Division touches many sciences, even in individual parks, it is essential that all workers have a broad perspective of the entire field of science as a whole, and preferably history and art as well.

2. Executive Ability

Each member of the educational staff must have the ability to successfully initiate and carry out the educational program in his particular field. This qualification is especially important in individual parks where the sudden expansion during the summer makes it necessary for the officer in charge to build up an entire new staff in a very short time and to maintain esprit de corps that gives life to the organization and to the work which is being presented to the public. The same qualification is as vitally necessary to workers in specialized fields and even to individual workers where enthusiasm, force, and tact govern the successful planning and execution of individual activities.

3. Ability in the Field of Education.

The practical success of educational workers depends to a large extent upon their understanding of the public and their application of the principles of learning to the presentation of their subject. Park educational workers must thoroughly understand their clientele, the public, but must also be familiar with the methods which will place the facts before the people in a manner that will develop their enthusiasm and desire for more without giving the impression that they are being "taught". Training in this field may come entirely from experience, but if backed by thorough understanding of educational psychology and methods it will be more intelligently applied.

APPOINTMENTS

B -

The following procedure will be followed in the matter of appointments:

<u>Chief Naturalist.</u> Appointment based upon Civil Service examination and rating, or upon promotion in the Division based upon qualifications and service record according to usual Civil Service form. Nomination and approval through the Director.

<u>Field Naturalist.</u> Appointment based on specialized qualifications in the particular field covered and satisfactory compliance with Civil Service regulations. Final appointment approved by Chief Naturalist and consummated through the Director.

<u>Park Naturalist - Senior Grade.</u> Appointment based upon satisfactory rating in Civil Service examination or upon advancement from next lower grade. Nomination or approval of nomination by Chief Naturalist; approval by Superintendent, appointment through Superintendent's office.

<u>Park Naturalist - Junior Grade.</u> Appointment based upon satisfactory rating in Civil Service examination or upon advancement from next lower grade. Nomination by Park Naturalist, Superintendent, or Chief Naturalist; approval by Chief Naturalist; approval by Superintendent; appointment through Superintendent's office.

<u>Naturalist-Photographer.</u> Appointment based upon satisfactory completion of Civil Service examination; nomination by Chief Naturalist; appointment through the Director.

Ranger Naturalist, Permanent. Permanent appointment based upon Civil Service examination arranged through Headquarters of the Educational Division; appointment to be approved by Park Naturalist and Superintendent; then approved by Chief Naturalist; appointment through Superintendent's office.

Ranger Naturalist, Temporary. Temporary appointment without examination based upon nomination by Park Naturalist (or in parks where no Park Naturalist is available, by Chief Naturalist); approval by Superintendent; then approved by the Chief Naturalist; appointment through Superintendent's office.

Applications for temporary Ranger Naturalist positions must be on form provided by the Headquarters of the Educational Division.

EXAMINATIONS

C -

All examinations will be prepared by the Chief Naturalist, or approved by the Chief Naturalist, and submitted through Educational Headquarters to the Civil Service.

D - CHANGES OF ASSIGNMENTS

Any temporary or permanent changes in duty assignments involving service outside the park, or territory normally covered by the educational officer, will be approved by the Chief Naturalist before such assignments are made.

E - SERVICE RECORDS

A Personnel Record Book, kept by the Park Naturalist, will contain detailed data on the qualifications of each educational worker, on the usual "Ranger Naturalist Application" form, giving all necessary information. At the end of each season the employee's service record will be filled out by the Park Naturalist (form supplied by Educational Headquarters) and attached to his qualification record. At this time duplicates of these reports will be sent to Educational Headquarters for general service record book.

F - CIVIL SERVICE REGULATIONS

Due to the fact that a reclassification for all positions in the Educational Division is now before the Civil Service Commission for consideration, the Civil Service regulations are temporarily omitted from the Plan.

(Pages 11 to 16, inclusive, reserved for Civil Service Regulations.) see appendix

VI - FUNCTIONS OF EDUCATIONAL UNITS

The following summary is presented in order to clarify the scope of activities of individual park educational units and of the Headquarters staff of the Educational Division:

FUNCTIONS OF EDUCATIONAL HEADQUARTERS UNIT

ACTIVITIES AT EDUCATIONAL HEADQUARTERS

A. General Activities

- 1. General administration of going educational activities.
 - (a) Development of policy and Plan of Administration for Educational Division as a whole.
 - (b) General supervision of educational activities in field (through park Superintendents).
 - (c) Development of "Plan of Administration of Educational Activities" for each park in cooperation with Park Naturalist.
 - (d) Drawing up of, or approval of, qualification data and examinations for all new positions or new appointments in Educational Division.
 - (e) Approval of, or transmission of, orders for all changes of assignment of educational staff members involving duty away from their regular stations.
- 2. Inauguration of new permanent educational improvements.
 - (a) Development of plans, or approval of plans, for the establishment of museums, branch museums, exhibits in place, libraries, zoos, other new permanent projects, including:
 - (1) Buildings and other plant
 - (2) Equipment
 - (3) Collection, preparation and installation of exhibits

B - Specialized and Detailed Activities

- 1. Coordination and amplification of scientific knowledge of the national parks.
 - (a) Wildlife
 - (b) Geology
 - (c) Plant Ecology
 - (d) Fish Culture
- 2. Protection and management of natural resources. Development of specialized plans for the most effective protection and administration of scientific, scenic, and aesthetic assets of the parks.
- 3. Liaison with scientific advisors, and with individuals and institutions assisting in the solution of specialized park problems.
- 4. Libraries. Establishment of library for Educational Headquarters and for each park under direction of a specialist attached to Educational Headquarters.
- 5. Publications.
 - (a) Supervision of scientific publications relating to parks.
 - (b) Approval of data and assistance in preparation of data for park Information Manuals.
- 6. Visual Instruction. Preparation of lantern slides and other photographic materials for use in parks.
- 7. Preparation of specialized exhibits for museums under direction of trained preparator.
- 8. Training of members of Educational staff through special assignment to duty under technical experts at Educational Headquarters.

Activities in the Field.

A. General Activities.

- 1. Inspection of current educational activities and advice on methods, subject matter, etc.
- 2. Development of plans for current administration or for new projects in cooperation with Park Naturalist and special advisors.

B. Specialized and Detailed Activities.

- 1. Scientific field investigations by specialists.
 - (a) Wildlife
 - (b) Geology
 - (c) Plant Ecology
 - (d) Fish Culture
- 2. Assistance by specialists in the application of plans for the protection and management of natural resources.
- 3. Detailed technical assistance in the establishment of new educational projects.
- 4. Photographic Fieldwork
- 5. Establishment of park libraries by specialist.

Extension Activities.

- A. Lectures by educational staff members
- B. Visual instruction material for loans
- C. Traveling exhibits.

FUNCTIONS OF PARK EDUCATIONAL UNITS

Activities in Park

- A. <u>Personnel</u>: Educational staff members nominated by Park Naturalist, approved by Superintendent, approved by Chief Naturalist, and appointed through Superintendent's office.
- B. Protection: Cooperation with park general administrative staff and with local representatives of Engineering and Landscape Divisions, (1) for the preservation and management of natural assets and (2) to make park educational features accessible by proper location of physical improvements.
- C. <u>Plans</u>: Development of plans for current administration ("Plan of Administration for Educational Activities" and "Manual of Instruction" for educational workers), and for new projects. These to be approved by Chief Naturalist and major plans submitted to Director for approval before being carried into effect in field.
- D. <u>Current Service</u>: Carrying out of approved program of educational service to public as outlined in park "Plan of Administration of Educational Activities," including lectures, guided trips afield, dissemination of information, sale of publications, maintenance of museums, libraries, nature trails, etc.
- E. New Projects: Establishment of new educational projects following approved plans and with the advice and assistance of the Chief Naturalist or other technical advisors.

Includes: 1. Buildings and other plant

- 2. Equipment
- 3. Collection, preparation and installation of exhibits.
- F. <u>Publications</u>: Nature Notes and similar popular material to be produced and distributed by park educational staff. Park Information Manuals and other technical material to be approved by Chief Naturalist before publication.
- G. <u>Research</u>: Carrying out of research problems as approved by Chief Naturalist under direction of, or with assistance of, scientific specialists.

Activities Outside Park

- A. Special assignment of staff members to Educational Headquarters or other stations for training. Approval of Superintendent and Chief Naturalist and Director required.
- B. Special duty assignments of staff members to Educational Headquarters, to other parks, or to other stations. Approval of Superintendent, Chief Naturalist and Director required.

Extension Activities

Personal lectures or loan of visual instruction material to private individuals or organizations outside park.

VII - PRINCIPLES OF ESTABLISHMENT AND MAINTENANCE OF INDIVIDUAL EDUCATIONAL ACTIVITIES

Advertising Educational Service

To insure the maximum effectiveness of current educational activities, it is necessary that each visitor be informed as to what educational service is offered in the particular park which he visits. Educational service should not be forced upon anyone, but every effort should be made to announce guided trips, lectures, museums, nature trails, et., by means of circulars, posters, items on park operators' menus and other printed matter, and by personal announcements, so that the opportunity to take advantage of this service will be open to all.

Guided Trips Afield

Main Objective: To develop in the visitor, through personal contact in the field, a sympathetic understanding of natural communities of plants, animals and their physical environment, with special emphasis on the individual features best exemplified by the particular park or locality.

This is one of the most important educational activities in the parks. Careful observations of the use of nature trails, self-guiding trails, museums, etc., shows that all of these are exceedingly important correlative activities, but that they do not replace personally guided trips.

Subject Matter and Methods: Avoid confusion by starting with a certain definite objective in view and arranging details of observation and discussion so as to work toward the end desired. Stimulate discussion among visitors but guide it along the main "theme" if possible. Beware of merely giving names or of introducing a great number of irrelevant observations. Leave your party with natural history ideas rather than with a catalog of facts.

Size of Parties: Experience has shown that the maximum size of a field party led by one guide should be thirty persons, and preferably twenty-five. Increasing numbers greatly decreases effectiveness to individuals and probably also the total effectiveness of the trip. Until such time as the educational staff is large enough to make the allotment of one guide to each thirty visitors, however, an effort will be made to reach all who are sincerely interested even though it results in the attenuation of the information offered.

Lectures

Main Objectives: To provide accurate information in an interesting form which will add to visitors' enjoyment of the park and give a comprehensive perspective of the park as a whole or its individual aesthetic, historical, and scientific features.

Subject Matter and Methods: Subject matter should have a distinct bearing on the park and should lead the interest of the audience to what they can observe for themselves in the field. In practice it has been found that comprehensive, carefully planned talks, covering a comparatively wide field, are to be preferred over lectures on individual details. Subject matter must be based upon authentic facts and recognized hypotheses and should be checked by the Park Naturalist or his representative in charge of lectures.

Repetition of Lectures: In some cases the same lecture is repeated daily, but it has been found advantageous for one individual to work up several lectures which are offered at intervals. Special preparation of new subject matter for each lecture best retains the interest of the lecturer, but has the disadvantage of consuming time which can often be used to greater advantage in current service to the public; also, except in the hands of an expert, a new lecture often lacks the finish which comes with practice in delivery. In most cases a reasonable compromise is advisable.

<u>Length of Lectures</u>: This varies with conditions. Experience has shown that, in general, the optimum time for lectures without slides is from twenty minutes to a maximum of thirty minutes, and for illustrated lectures about forty-five minutes.

<u>Illustrative Materials</u>: Illustrated lectures are unfailingly popular and far more effective than talks which depend upon hearing only.

Lantern slides for park lectures will be prepared at Educational Headquarters and should be augmented, where possible, by slides obtained from other sources. The Park Naturalist is responsible for the classification and maintenance of a park lantern slide collection.

Motion pictures are valuable educational aids, but should never be introduced within the body of a lecture illustrated by slides. Almost always they are used to greatest advantage following the lectures.

Illustration by the use of specimens often adds great interest to a lecture and is especially applicable to shorter talks.

General Park Lectures: Each Park Naturalist will prepare in written form a general lecture on his particular park, and at least three or four additional lectures on as many especially interesting features (history, geology, Indians, flowers, birds,

etc.) Accompanying each should be a list of sixty to seventy-five subjects which will illustrate it more effectively. When photographs are not available, or better ones desired, these will be secured in the field by the photographer of the Educational Division. The lectures will be mimeographed and will be available with the accompanying sets of slides at park headquarters, at the Headquarters of the Educational Division, and at the Washington office of the National Park Service.

Museums

Main Objectives: (1) To orient the visitor: (2) to give him a comprehensive perspective of the story of the park as a whole and of the place of each major distinctive feature in its proper relation to this story: and (3) to lead him with understanding to the points of greatest interest and inspiration in the parks.

Our national parks themselves may be considered great outdoor museums where exhibits are at hand, in place, awaiting interpretation to the visitor. Their vastness, however, necessitates a collection in one place of sufficient exhibit material to present to the visitor the consecutive story of the park as a whole. This also allows the presentation of material which is seldom or never seen in the field, but which bears an exceedingly important place in the general story. It also allows of the preservation of historical, ethnological and other perishable exhibits.

Scope of Park Museum: In general park museums are small. The exhibits displayed should be carefully planned so as to allow the casual visitor to "make the circuit" intelligibly in from twenty to thirty minutes. Care should be exercised in relegating to each class of exhibits the proper proportion of space warranted by its importance in the park or its bearing on the park story. Specialized exhibits, research collections and duplicate material should be available to those especially interested: it should not be on general display.

Starting the Park Museum: In a park where no museum has yet been established, the Park Naturalist should immediately assemble all available exhibit material, even though it must at first be stored, or (as in some parks) exhibited temporarily in tents. At this stage everything of potential value should be accumulated, but efforts should be concentrated upon the securing of historical and archeological specimens, and others which, once gone, can never be replaced. Exhibits in the temporary museums will necessarily be limited to the material on hand: with the nucleus once established, however, efforts should be made to gather the material most needed to round out the collection as a whole.

Accessions: Park museum collections are built up by means of gift, loan, purchase or field collecting. Gifts are extremely important, especially when the museum is being started; possibilities in this field are almost unlimited for a resourceful Park Naturalist. Gifts of exotic material should be discouraged unless they have value as exchanges. No gifts should be accepted "with strings attached", and it should be made plain to the donor that, while gifts will be duly acknowledged on labels and elsewhere, their arrangement and exhibit will be entirely governed by the judgment of the museum director. Each gift should be officially acknowledged in writing and accession records immediately made.

Loans should be accepted only with the understanding that neither the Government nor the Park Naturalist is responsible for the safety of the exhibit in case of fire, theft or damage. Much loan material must be utilized during the early stages of museum development, but this should be replaced as soon as possible, or else acquired permanently (as is often possible after being for some time on display).

Administration: During the preliminary stage the Park Naturalist is director, curator, and staff. As development takes place and both museum and general educational service grow, the Park Naturalist usually finds it necessary to divide the educational activities in the park into two or more groups, specializing on one himself and delegating the others to one or more of his lieutenants under his direction. The Park Naturalist may therefore be the ultimate museum director, or may exercise general supervision over its operation through an assistant to whom this specialized activity has been assigned.

Museum hours should be based upon utilization by the public. The museum should be open each day of the park season during all hours that it will be used effectively.

<u>Plans</u>: All plans for museum buildings and equipment, and for the general arrangement and installation of exhibits, will be approved by the Chief Naturalist.

Branch Museums

<u>Main Objectives</u>: To exhibit, at places widely visited by the public, such materials as will comprehensively explain the features of greatest importance in that particular section.

Scope and Subject Matter: Branch museums should contain only sufficient exhibits to adequately cover their limited field and, where possible, advantage should be taken of the opportunity of utilizing natural exhibits in place.

One of the chief advantages of branch museums is the opportunity for personal contact of the Ranger Naturalist in charge with comparatively small groups of specially interested visitors. The branch museum is exceedingly important as a demonstration station, and much of its effectiveness depends upon the successful and continual program of personal service to the public.

Exhibits in Place

Exhibits are much more interesting and educationally effective if they can be shown in place than are the same objects removed and introduced into an artificial environment. Outstanding examples of flora and fauna, and especially geological, archeological and historical exhibits which can never be replaced, will be carefully protected and if within reasonable distance of traveled routes, will be made accessible and labeled in accordance with carefully studied plans.

Animal Exhibits

The national parks are the greatest wild life sanctuaries of America. The great interest in living things displayed by the public, even in areas famous for their unique glaciers, geysers, or scenery, warrants our considering the park fauna as one of our major educational assets.

With protection, certain animals, such as the deer, beaver, and bear, become numerous and tame enough under natural conditions to be frequently seen by visitors. Others, such as the mountain lion, coyote, badger, elk, antelope, and buffalo, are nocturnal or timid or else avoid areas of tourist travel. So frequent are the demands on the part of the public that it be made possible for them to see these scarcer mammals, that in certain parks individual species or small herds are kept in captivity in comparatively large enclosures where they can live under as nearly natural conditions as possible.

That the exhibition of animals has definite educational value is apparent by insistent public demand. In planning and administering such exhibits, however, the following principles should be borne in mind:

- 1. Animals which can readily be seen under natural conditions will not be kept in captivity.
- 2. In case an exhibit is warranted, enclosures will be sufficiently large to approximate natural conditions as nearly as possible.
- 3. If a study of the situation warrants a permanent exhibit, enclosures will be so arranged that there are no bars or fences between the observer and the animals and, if possible, no patently artificial barriers in sight.

Animal exhibits will be established and administered by Park Naturalists and other members of the Educational Division in accordance with previously approved plans.

Botanical Exhibits

1. Cut Flower Exhibits:

Exhibits of cut wildflowers are maintained in many parks in order to enable visitors to observe and identify similar species in the field and in order to bring to their attention the necessity for protecting the park flora.

The time required for the collecting and labeling of a comprehensive flower exhibit is comparatively large, sometimes averaging from one-quarter to one-third of one man's time. It is therefore important that the use by the public be carefully observed by the Park Naturalist so that the time allotted to preparation of the exhibit will be commensurate with the use value to the public. A great saving in time can be effected by the use of specially built exhibit stands in which the stems of the flowers are kept in fresh running water.

Where possible the Park Naturalist should encourage the cooperation of park operators, who are often willing to maintain a flower exhibit if the flowers can be labeled, by park officers.

2. Wildflower Gardens:

Experimental wildflower gardens established in Yellowstone and Zion have demonstrated that visitors show an even greater interest in growing flowers than in exhibits of cut blossoms. Besides their intrinsic interest, wildflower gardens have a great advantage over cut wild flower exhibits in that they can be maintained with far less labor, one hour a day usually being sufficient. Wherever possible, therefore, Park Naturalists will plan the establishment and maintenance of such growing exhibits of the park flora.

3. Use of Wildflowers by Park Operators:

Park regulations protect all natural features and shall be interpreted to forbid the use of wildflowers for table decoration or other decorative purposes. Labeled flowers, however, have an educational value, and permission may be granted by the Superintendent for the display of such labeled flowers, on dining tables or elsewhere, under regulations which will limit the flowers used to the common species, which will be obtained from unfrequented areas.

Nature Trails and Self Guiding Trails

<u>Main Objectives</u>: To offer park visitors the opportunity for scientific exploration, to observe and study for themselves, without a guide, the scientific and inspirational features of the trailside.

Nature Trails and Self Guiding Trails, when first established experimentally in the parks, were expected to partially replace the personal guiding services of a badly overworked educational staff.

It was found, however, that these trails supplement rather that replace personal guiding and lecturing service, and that individuals who made use of the trails were also stimulated to take advantage of the other educational opportunities offered by the government. A further study of the use of the trails also disclosed the fact that two classes of visitors who were normally not reached made use of the trails -- those who found it impossible to take advantage of the guided field trips and lectures on the time scheduled and those who preferred to explore singly, or in small parties, "on their own".

Establishment: A careful study of the area should precede the location of the trail to determine the educational features to be reached. The trail should not be too long, usually not over one-half to one mile. Longer trails should be less intensively labeled. Resting places should be frequent and labels more numerous in these small sections. Before writing labels, reconnoitre the entire trails to determine materials available for demonstration. Plan the labels so as to proceed from simple to more complex facts, culminating in a clear understanding of the general principles of the branches of natural history best exemplified. It is exceedingly important that the visitor should carry away with him such a perspective rather than a catalog of unrelated facts. Plan the wording of labels so as to stimulate the visitor to observe things for himself -- the labels should tell the visitor how to read the story which the exhibits themselves will tell him. Make labels interesting, short, and concise; where longer explanations are necessary, divide the data and record on consecutive labels.

<u>Labeling</u>: In laying out a Nature Trail for the first time, use baggage tags or other temporary labels. Make a transcript of all labels, with notes on location, so that lost or destroyed labels can always be immediately replaced. Various types of rustic labels have been devised at Educational Headquarters, and data on them will be supplied on request. Also small embossed metal labels can be supplied by the Chief Naturalist; the Park Naturalist should supply copy of text desired, which should be limited to a maximum of fifty words per label.

<u>Maintenance</u>: In order to keep Nature Trails always up to date, the Park Naturalist or his representative should revise all temporary labels (flowers in bloom, etc.), and replace damaged or lost labels at least once weekly, and preferably oftener.

Libraries

<u>Functions</u>: Park libraries have a twofold function - (1) They are necessary for references of the educational staff and other members of the Park Service; and (2) they are necessary for reference or general reading of specially interested park visitors.

<u>How Started</u>: Because of a federal regulation [prohibiting limiting] the expenditure of funds for the purchase of books, these must, with few exceptions, be secured through donation. Usually the nucleus of a park library can be formed by securing free governmental publications and augmenting these with individual donations secured privately. This preliminary work should be pushed as far as possible by the Park Naturalist.

A complete bibliography is being compiled at Educational Headquarters with a view to the establishment of more adequate libraries for all parks. As soon as the permanent services of a librarian are available, books will be secured, classified, and sent out to the parks through this central clearing bureau.

Classification: The Library of Congress system of classification has been adopted for all park libraries. All books received will immediately be classified and 3" x 5" cards prepared by author and title; these records should always be kept up to date.

<u>Use</u>: In general, books from the park library will not be available for circulation and, if taken away from the room in which they are kept, a special permit must be obtained from the Park Naturalist.

Coordination and Amplification of Scientific Knowledge on the Parks.

General Principles: The limited research program conducted by the Educational Division si definitely planned to further the two major objectives of the National Park Service, namely:

- 1. The administration and protection of the national parks as wilderness areas; and
- 2. The educational use of the national parks by the American public.

Fundamental research on many of the most important park scientific problems is already being conducted and will be continued by serveral of the great research institutions of the country. Instead of duplicating any part of this effective work, the research activities of the National Park Service will be confined chiefly to the summarization of all existing knowledge on the parks and to the filling in of certain gaps in our knowledge which are particularly important to the educational program and to the protection and administration of natural resources.

To accomplish this end it is planned that there be associated as members of the Headquarters staff of the Educational Division, at least one scientist of highest rank in each of the most important branches of knowledge pertaining to the parks, namely, geology, zoology, and botany. Each will work in close collaboration with other staff members in planning the efficient protection and administration of the natural features of the parks and in planning an educational program based on highest scientific standards.

In general, the duties of these scientific specialists will be:

- 1. To assemble all known data (on each particular subject) for each park;
- 2. To personally survey conditions in the parks in order to prepare, as nearly as is possible at the present time, an inventory of our scientific assets;
- 3. To personally survey field conditions in the parks to determine what unsolved scientific problems are in greatest need of solution;
- 4. To correlate the research work of outside agencies looking to the solution of park problems and to stimulate additional research work of this nature;
- 5. To keep the Educational Division abreast of current scientific research and to furnish, correct, and approve the technical data used by members of the Educational Division, particularly in current work in the parks, and;
- 6. To stimulate and supervise research on the part of individual Park Naturalists and their staffs.

Wilderness Study Areas

Certain representative areas will be set aside in the parks for scientific study only. These will be selected after a careful examination by scientific specialists and park administrative officers, the basis of selection being (1) scientific importance, and (2) the possibility of administering the area as to exclude all human use.

Two district Experiment Stations of the U.S. Forest Service are already planning cooperative scientific studies in plant ecology when such areas are reserved in the parks, and it is expected that a number of other research institutions will institute investigations in other branches of knowledge.

The greatest problem in connection with the establishment of wilderness reserves -- the problem which should be exhaustively studied -- is that of selecting an area which is ideal from the scientific standpoint and yet offers no unreasonable obstacles in administration.

Field Collecting

Where field collecting is necessary in the parks, exhibit material will be taken only from areas away from existing or planned routes of travel.

A certain amount of field collecting will be permitted outside organizations for scientific purposes, a special written permit being issued by the Superintendent upon recommendation of the Park Naturalist. The collecting area will be designated by the Park Naturalist and any irreplaceable material (as geological specimens) will be collected under his personal supervision. No collecting of ethnological or historical materials will be permitted except as a government operation.

Publications

Publications of the Educational Division fall into four general classes:

- 1. Current publications for popular use: Individual park "Nature Notes" and "Natural History Leaflets"; usually mimeographed in parks.
- 2. Permanent publications for popular use: Longer bulletins on natural history features of parks; printed by Government Printing Office.
- 3. Publications for use of educational staff: Individual park Information Manuals, Manuals of Instruction to Educational Workers, etc.
- 4. Technical publications on scientific research. (None as yet published.)

Detailed data on the individual publications listed above follow:

1 - Nature Notes.

Nature notes is an organ of public contact, usually produced in mimeographed form once a month by the individual park educational staff.

Contact: Nature Notes may contain interesting information on any

subject related to the park; although written in non-technical language, all data must be scientifically accurate. The subject matter may consist of records of new facts which have come to the attention of staff members in the field or of already recorded scientific facts which are not commonly available to the general public.

Circulation: Nature Notes is distributed free to:
All interested Park Service officers;
Headquarters of each park, Educational
Headquarters, Field Headquarters, and
Washington Office;
Newspapers and other publications that will
copy it, all or in part;
Institutions or individuals which use the
content material for teaching purposes;
Libraries desiring the publications as a
reference; and
Individuals particularly interested in
keeping up their current knowledge of
the parks.

Nature Notes, being an official publication, is mailed out under government frank.

Production: The Park Naturalist is editor and usually finds it necessary to personally write much of the content material. Each Ranger Naturalist, or other educational staff officer, should be required to write at least one short article per week. Nature Notes is mimeographed by the park office force unless special arrangements can be made with private individuals to print the publication gratis.

2 - Permanent Popular Bulletins

Larger bulletins on mammals, birds, flowers, geology, and other park features are published through the Government Printing Office and are sold to the public at cost.

Manuscripts for such popular bulletins are occasionally presented to the Park Service for printing and are edited at Educational Headquarters as are all other permanent publications of the Division. With the development of a staff sufficient to collect and coordinate scientific data on the parks, this series of bulletins will be augmented by many publications greatly needed and demanded by the public.

3 - Park Information Manuals

Definition:

The Manual of Information for each individual park is a compilation, in synoptic form, of all important known facts related to that park. It is not merely a collection of written articles on the interesting scientific features of the park, but, instead, a systematic arrangement of carefully condensed facts. It must be <u>CONCISE</u>, <u>ACCURATE</u>, <u>ALWAYS UP TO DATE</u>, and <u>SIMPLE</u>; all facts must be <u>immediately</u> available to a person who has never before used the volume.

Purpose:

The park Manual of Information is intended for use as a ready reference by all park officers, but particularly by members of the educational staff. It should augment rather than supplant books, technical articles on scientific features of the park, popular park bulletins, Nature Notes, and other publications which should be available for more thorough study at the park library.

The Manual of Information will be produced and revised under the direction of the Park Naturalist of that particular park, and will be edited or approved by the Chief Naturalist before being adopted for use.

Form and Arrangement:

The Park Manual of Information will be mimeographed (lines single spaced) on standard government letter-size paper which will be punched at the left side so as to fit the standard three-ring loose-leaf binders.

The Manual should be divided into as many sections as there are major branches of science, history, art, or other subjects upon which data are available. To facilitate use, each section should be labeled by a thumb-marker at the right margin.

As an example of the major sections which might be adopted, the following list is taken from the Information Manual for Crater Lake National Park:

- 1. Geography and topography
- 2. Place Names
- 3. History
- 4. Indians (and legends)
- 5. Geology
- 6. Ecology and Life Zones
- 7. Mammals
- 8. Birds
- 9. Reptiles

- 10. Amphibians
- 11. Fish
- 12. Invertebrates (except insects)
- 13. Insects
- 14. Lower Plants
- 15. Flowering Plants
- 16. Trees
- 17. Meteorology
- 18. Park Administration
- 19. Bibliography

Other divisions may be necessary for other parks.

Contents of Each Section:

At the beginning of each section will be a synopsis of the subject as related to the park. It should include the major essential facts, but should be brief, varying approximately from one to five single-spaced typewritten pages according to the importance of the subject. The purpose of this synopsis is to give the reader a perspective of the subject as a whole in its bearing on the general story of the park.

All known facts in the particular field in question should be briefed and arranged in alphabetical order following the synopsis, each being given space according to its importance, which will usually vary from one short paragraph to a full page.

References:

References are important, particularly in order to facilitate further investigation on any subject. A list of all the references on that particular subject (recorded in usual library form) will be given at the end of each section. Individual references, in as brief a form as possible, must be given at the end of each individual item; for example -

Ref: Sargent p.38, or

Ref: Smith, J.S. - Observation 2/18/25: See N.P.S. file on _____.

In case two or more titles by the same author are listed in the bibliography at the end of the section, also give the key words of the title.

The initials of the writer or person who briefed the data should be given in parentheses after each article, as: (J.D.C.)

It should be noted that all titles listed at the end of each section will be repeated in the general bibliography for the park, which appears as a separate section of the Manual.

4 - Manuals of Instruction

Written by the Park Naturalist for the detailed instruction of Educational staff members in each type of activity conducted, the "Manual of Instruction for Educational Workers" supplements the officially approved park "Plan of Administration" by giving details of all matters of current operation.

5 - Technical Publications

Due to the fact that the activities of staff members are largely confined to the accumulation of already available scientific facts, no technical publications based upon research have as yet been produced by the Educational Division. With the development of a small scientific staff, a certain amount of new research material will be published, although this will probably not be the main function of such a staff but incidental to its other activities which are listed in detail in a preceding section.

Sale of Publications in the Parks

The sale of all authentic publications on the parks, whether publicly or privately printed, is encouraged by the Park Service as of distinct value in augmenting the educational program. Park Superintendents will push the sale of government publications by the National Park Service staff, and, when possible, will arrange for the sale of other books and material of educational nature on the park.

APPENDIX

Tentative Civil Service Regulations relative to positions in the Educational Division of the National Park Service.

(IV - F-)

CIVIL SERVICE REGULATIONS RELATIVE TO POSITIONS IN THE EDUCATIONAL DIVISION

Civil Service Title	Scientific & Prof.Grade	No.	Salar	¥
Chief Naturalist	5	\$4	600 to	\$5200
Field Naturalist	4	\$3	800 to	\$4400
Park Naturalist - Senior Grad	ie 3	32	200 to	3700
Park Naturalist - Junior Grad	le 2	26	600 to	3100
Naturalist Photographer	2	26	500 to	3100
Ranger Naturalist, Permanen	t 1	20	000 to	2500
Ranger Naturalist, Temporar		20	000 to	2500

Salary and Promotion

The entrance salary in the National Park Service for Chief Naturalist and Chief Forester is \$4600 per year; for Field Naturalist \$3800 per year; for Park Naturalist - Senior Grade, \$3200 per year; for Park Naturalist - Junior Grade, \$2600 per year; for Naturalist-Photographer \$2600 per year; for Ranger Naturalist, Permanent \$2000 per year; for Ranger Naturalist, Temporary \$2000 per year.

Promotion from grade to grade may be made in accordance with the Civil Service rules as vacancies occur, provided the employees possess the qualifications deemed necessary for the corresponding advance in duties and responsibility.

Certification for Field Service

In filling vacancies in positions certifications will be made of the highest eligibles, on the appropriate register for the entire country, who have not expressed unwillingness to accept appointment where vacancy exists.

Subject and Weights of Examination.

Competitors will not be required to report for written examinations at any place, but will be rated on the following subjects, which will have the relative weights indicated:

- 1. Education and experience Weight 70%
- 2. Thesis or publications (to be filed with application) Weight 30%

Total Weight: 100%

Basis of Ratings

The ratings on the first subject will be based upon competitors' sworn statements in their applications upon corroborative evidence.

Writings

Under the second subject applicants must submit with their applications a thesis containing not less than 2000 nor more than 2500 words, or in lieu of such thesis publications of which the applicant is author or co-author. The material submitted must be on a subject in some field of natural history.

Duties and Prerequisites

The duties of these positions and prerequisites for eligibility for appointment are as follows:

CHIEF NATURALIST

<u>Duties</u>. Duties will be to plan and codify and administer an educational policy for the National Park Service; to plan and organize educational activities in the national parks, including (a) current operation of guided trips, lectures, museums and information bureaus, (b) permanent activities such as establishment of museum, development of exhibits in place, publications, research, technical instruction, etc.; to plan and conduct investigations, protection and management of wild life resources in the national parks.

Prerequisite. Applicants must show graduation in science from a college or university of recognized standing, or the equivalent as approved by the Park Service, and in addition that they have taken courses in geology, botany and zoology (or related subjects); and that they have had at least six years of responsible experience in professional or research work in natural history or education, such experience to be of a character to evidence executive ability to organize and direct scientific investigations and the current operation of educational activities for the general public. Graduate work in science or education may be substituted, year for year, for the required experience, up to a total of three years.

FIELD NATURALIST

<u>Duties</u>. To conduct, under general supervision of the Chief Naturalist, individually or with associates and assistants, specialized detailed field investigations in natural history in a particular specified field (wild life, fish culture, geology, etc.); to develop comprehensive management plans based upon field investigations; to write or edit all scientific publications by the Park Service in the particular specified field; to personally supervise specialized field operations (restocking of streams with fish, etc.).

Prerequisite. Applicants must show graduation in science from a college or university of recognized standing, or the equivalent (as approved by the Park Service), and in addition that they have taken courses in the specialized field to which the applicant will be assigned (wild life, fish culture, geology, etc.); and that they have had at least four years of responsible experience in professional or research work in the specific field. This experience must have been of a character to indicate clearly the applicant's ability to organize and direct scientific research and its practical administrative application. Special credit will be given for research in important problems in the specific field. Graduate work in this field may be substituted, year for year, for the required experience up to a total of three years.

Appointees are eligible to advancement to grade of Chief Naturalist by promotion.

PARK NATURALIST - SENIOR GRADE

<u>Duties</u>. Duties will be to carry out, under the general supervision of the Chief Naturalist, individually or with associates or assistants, all educational activities of an individual park, including (a) current operation - guided trips, lectures, museums and information bureaus - (b) establishment of permanent activities such as museums, exhibits in place, publications, research, technical instruction, etc.

Latitude is allowed for the exercise of independent judgment and responsible management.

Prerequisite. Applicants must show graduation in science from a college or university of recognized standing (or the equivalent as approved by the National Park Service) and in addition that they have taken courses in geology, botany and zoology (or related subjects); and that they have had at least three years of responsible experience in professional or research work in science, such experience to be of a character to evidence executive ability to organize and direct scientific investigations and current educational service to the public. Graduate work in science may be substituted, year for year, for required experience, up to a total of two years.

Appointees are eligible to advancement to higher grades within the National Park Service Educational Division by promotion.

PARK NATURALIST - JUNIOR GRADE

<u>Duties</u>. Duties will be (1) to carry out under the general supervision of the Chief Naturalist, individually or with associates or assistants, all educational activities of an individual park, including (a) current operation - guided trips, lectures,

museums and information bureaus - (b) establishment of permanent activities such as museums, exhibits in place, publications, research, technical instruction, etc. Latitude is allowed for the exercise of independent judgment and responsible management.

(2) As Assistant Park Naturalist to carry out any of the above specified duties by assignment from the Park Naturalist.

<u>Prerequisite</u>. Applicants must show graduation in science from a college or university of recognized standing (or the equivalent as approved by the National Park Service) and in addition that they have taken courses in geology, botany and zoology, or equivalent subjects; that they have had at least one year of responsible postgraduate experience in professional or research work in science or the teaching of science.

Appointees are eligible for advancement to higher grades within the National Park Service Educational Division by promotion.

NATURALIST-PHOTOGRAPHER

<u>Duties</u>. Duties will be to carry out, under the general supervision of the Chief Naturalist, individually or with associates or assistants, the photographic activities of Educational Headquarters, including the making of photographs and moving pictures in national parks and the development, printing and filing of negatives, lantern slides and motion pictures at Educational Headquarters.

<u>Prerequisite</u>. Applicants must show ability in fields of general commercial photography, motion pictures, micro-photography, preparation of lantern slides and transparencies, and should have a general knowledge of the various fields of science.

Appointments base upon competitive examination under regular Civil Service procedure.

RANGER NATURALIST, PERMANENT

<u>Duties</u>. Duties will be (1) to carry out in a national park, under the supervision of the Park Naturalist, (a) current educational service to the public, as lectures, guided trips afield, museum and information bureau attendance, etc., and (b) detailed specialized assignments in museum preparation, preparation of exhibits in place, establishment of nature trails, etc.; or (2) to carry out, under the supervision of a Field Naturalist or other member of the Educational Division staff, specialized technical duties as directed.

<u>Prerequisite</u>. Applicants must show graduation in science from a college or university of recognized standing (or the equivalent as approved by the National Park Service) and in addition that they have taken courses in geology, botany and zoology, or equivalent subjects.

Appointees are eligible to advancement to higher grades within the National Park Service Educational Division.

RANGER NATURALIST, TEMPORARY

<u>Duties</u>. Duties will be (1) to carry out in a national park during the active season, under the supervision of the Park Naturalist, (a) current educational service to the public, as lectures, guided trips afield, museum and information bureau attendance, etc., and (b) detailed specialized assignments in museum preparation, preparation of exhibits in place, establishment of nature trails, etc.; or (2) to carry out, under the supervision of a Field Naturalist or other member of the Educational Division staff, specialized technical duties as directed.

<u>Prerequisite</u>. Appointments are temporary and the work is specialized, therefore it is necessary for the Park Naturalist or Chief Naturalist to locate applicants, to check their personal and technical qualifications, and to recommend appointments through Superintendents of the parks in which service is to be performed.

Advancement to Ranger Naturalist, Permanent, or higher grades in the Educational Division will be made only through Civil Service examination, although successful service as Ranger Naturalist, Temporary, will be credited in the examination.

Age.

On the date of examination applicants for Chief Naturalist, and Field Naturalist, must not have reached their fifty-five birthday; applicants for

Park Naturalist - Senior Grade, for Park Naturalist - Junior Grade, for Naturalist-Photographer, for Ranger Naturalist, Permanent and for Ranger Naturalist, Temporary, must not have reached their fiftieth birthday.

Oral Examination.

Applicants may be required to report at Washington, D. C., or elsewhere for oral examination to determine their personal characteristics and address, tact, judgment, adaptability, and general fitness for the performance of the duties of the position. The oral examination will be given to applicants in order of their standing and only to such number as the needs of the service require. An applicant who fails to pass the oral examination will not be eligible for appointment. Applicants will be notified of the date and place of the oral examination.

Retirement.

Classified employees who have reached the retirement age and have served fifteen years are entitled to retirement with an annuity. The retirement age for positions of this kind is 70 years. A deducation of 2-1/2% is made from the monthly salary to provide for this annuity, which will be returned to persons leaving the service before retirement with 4 per cent interest, compounded annually.

Photographs.

Applicants must submit with their applications their unmounted photographs, taken within two years, with their names written thereon. Proofs or group photographs will not be accepted. Photographs will not be returned to applicants.

<u>Physical examination of appointees.</u> In view of the benefits granted employees under employees' compensation and retirement legislation, persons appointed may be given a physical examination by a physician in the Federal service before entering on duty.

Residence and domicile. Applicants will be admitted to these examinations regardless of their residence and domicile; but only those who have been actually domiciled in the State or Territory in which they reside for at least one year next preceding the examination may become eligible for permanent appointment to the apportioned service in Washington, D. C.

Applicants. Applicants should at once apply for Form 2318, stating the title of the examination desired, to the Civil Service Commission, Washington, D.C.; the Secretary of the United States Civil Service Board, Customhouse, Boston, Mass., New York, N.Y., New Orleans, La., Honolulu, Hawaii; Post Office, Philadelphia, Pa., Atlanta, Ga., Cincinnati, Ohio, Chicago, Ill., St. Paul, Minn., Seattle, Wash., San Francisco, Calif., Denver, Colo., Old Customhouse, St. Louis, Mo., Administration Building, Balboa Heights, Canal Zone; or to the Chairman of the Porto Rican Civil Service Commission, San Juan, P.R.

<u>Preference</u>. Applicants entitled to preference because of military or naval service should attach to their applications their original discharges, or a photostat or certified copy thereof, or their official record of service. If, because of disability, the applicant is entitled to a pension under authorization of the Pension Bureau, he should also attach to his application his pension certificate, or a certified copy thereof, or a certificate from the Veterans' Bureau showing that he is entitled to compensation or training by that Bureau. Such papers will be returned to the applicant.